

CLAIMS

1. A data exchange and storage device (60), comprising:
a controller module (62) including a firmware used for controlling the
5 operation of each of modules in the data exchange and storage device (60) and
performing data processing and information exchange;
an internal memory module (61) for storing data under the control of the
controller module(62);
a system interface module (63) being connected with a data processing
10 system (10) and performing data exchange with the data processing system (10)
under the control of the controller module (62); and
an external storage equipment interface module (64) being connected
with an external storage equipment and performing data exchange with the
external storage equipment under the control of the controller module (62).

2. The data exchange and storage device of claim 1, wherein the internal
memory module (61) includes a hard disk, a removable hard disk, a
semiconductor storage, and an optical medium storage driving device.

3. The data exchange and storage device of claim 2, wherein the storage
medium of the semiconductor storage is selected from one of Flash Memory,
DRAM, EEPROM, SRAM, FRAM, MRAM and Millipede, and adopts one or more
semiconductor chips.

4. The data exchange and storage device of claim 1, wherein the system
interface module (63) includes USB interface, IEEE1394 interface, Bluetooth
interface, IrDA infrared interface, HomeRF interface, IEEE802.11a interface,
IEEE802.11b, IEEE802.11g, SCSI, RS232 and printer parallel port, wired wide
area/local area interface and/or wireless wide area/local area interface.

5. The data exchange and storage device of claim 1, wherein the external
storage equipment interface module (64) includes SM, CF, MMC, SD, MS, MD or
x-D interface.

6. The data exchange and storage device of claim 1, wherein the system
interface module (63) and the external storage equipment interface module (64)
either include single interface or a group of interfaces of the same type or
different types of interfaces.

7. The data exchange and storage device of any one of claims 1 to 6,
further comprising a power source module (65) for supplying power to the data

exchange and storage device from the data processing system (10) through an external power source or a self-supplied battery or the system interface module (63).

5 8. The data exchange and storage device of any one of claims 1 to 6, further comprising a manual control module (66) for performing the manual control of data capture and transmission, information prompt, and operational mode switching.

10 9. The data exchange and storage device of claim 8, wherein the manual control module (66) includes a dial switch and keys.

15 10. The data exchange and storage device of any one of claims 1 to 6, further comprising an information prompt module (67) for displaying static information and dynamic information.

20 11. The data exchange and storage device of claim 10, wherein the information includes user information, product information, device information, transmission file information, operational state information and the information of external storage equipments which are connected therewith.

25 12. The data exchange and storage device of claim 10, wherein the information prompt module (67) includes at least one of a liquid crystal display, a light emitting diode, a LED, a sound device and a vibrator.

30 13. The data exchange and storage device of any one of claims 1 to 6, further comprising an audio module (68) and/or a video module (69) for combining with the internal memory module (61) or external storage equipments to implement a function of playing multi-media.

35 14. The data exchange and storage device of any one of claims 1 to 6, further comprising an eject device arranged at the interface of the external storage equipment interface module (64), the eject device may eject the external storage equipment after being pressed.

 15. The data exchange and storage device of any one of claims 1 to 6, wherein the external storage equipment is a removable disk or a storage card.

40 16. A method of data exchange and storage for realizing data exchange and data storage between the data exchange and storage device (60), the external storage equipment and the data processing system host (10) through the data

exchange and storage device (60) of claim 1, comprising the steps of:

1) the controller module (62) of the data exchange and storage device detecting the characteristic information of the external storage equipments connected with the relevant interfaces of the external storage equipment interface module (64), selecting the relevant interface protocols according to the
5 characteristic information of the external storage equipments, and establishing connections with the external storage equipments;

2) the controller module (62) controlling the data exchange between the data exchange and storage device (60) and the external storage equipment
10 or the data processing system, and controlling the access to the internal memory module (61) and the external storage equipment according to the requests from the data processing system or users.

17.The method of data exchange and storage of claim 16, further
15 comprising: the controller module displaying the data read from the external storage equipment or the internal memory module on the display part of the information prompt module (67) according to the operational instructions of the data processing system and the users; and/or

outputting the user information, the operational state information of the
20 data exchange and storage device, the relevant information of the external storage equipment through the information prompt module (67).

18.The method of data exchange and storage of claim 16, further
25 comprising: playing the multi-media data read from the external storage equipment or the internal memory module through the audio module (68) and/or the video module (69) according to the operational instructions of the data processing system and the users.

19.The method of data exchange and storage of claim 16, further
30 comprising: the manual control module (66) transmitting the operational instructions, such as, storing user data, prompting information, switching operational modes, etc., to the controller module (62).